From: MCCLINCY Matt
To: Eric Blischke/R10/USEPA/US@EPA; Chip Humphrey/R10/USEPA/US@EPA
Subject: FW: DEQ-Rhone Poulenc Deep Groundwater Memo Discussion
Date: 10/16/2008 10:01 AM

Chip and Eric,

Fyi if you attend today.

Matt

From: LACEY David
Sent: Wednesday, October 15, 2008 3:55 PM
To: 'Koch.Kristine@epamail.epa.gov'
Cc: MCCLINCY Matt; KENT Mavis D; GAINER Tom
Subject: DEQ-Rhone Poulenc Deep Groundwater Memo Discussion

Kristine,

Below are some general comments DEQ has regarding the Rhone Poulenc Deep Groundwater Memo. Please let me know if you have any questions before tomorrow's meeting that would be helpful for you.

David Lacey

Oregon Department of Environmental Quality

Northwest Region

2020 SW Fourth Ave., Suite 400

Portland, Oregon 97201-4987

Phone 503-229-5354

Fax 503-229-6945

General Comments:

DEQ agrees that discharge areas for the Deep Gravel Zone (DGZ) are generally understood in Region 1. The conceptual hydrogeologic model (CHM), groundwater sampling, and in-water work support SLLI's conclusion that the major pathway of RP-COIs to the river is through the DGZ and COI discharge is in the "groundwater discharge areas" identified in Region 1. Generally, the risk posed to the river by RP-COIs in Regions 2 and 3 by deep groundwater discharging is lower based on their concentrations in monitoring wells adjacent to the river and depth from the bottom of the river.

However, DEQ disagrees with several conclusions. Based on the data provided in this letter, DEQ does not agree that further investigation of discharge occurring deeper in the Willamette River is not warranted because of potential future engineering

controls. The extent of the plume and potential exposure points may need to be assessed further so that the performance of any potential remedy can be addressed. Additionally, while evaluating the distribution of 1,2-Dichlorobenzene (1,2-DCB) in the subsurface is an appropriate tool for developing the conceptual hydrogeologic model (CHM), the distribution of all RP-COIs needs to be evaluated to ensure that there are no data gaps.

Based on the information presented in this letter the potential discharge of deep groundwater to the River in Region 1, Region 2 and Region 3 has not been adequately addressed. DEQ has identified several issues that need to be addressed in future investigates as part of the source control investigation or RI/FS process.

1. The conceptual hydrogeologic model includes in the Deep Gravel Zone (DGZ) a weathered basalt zone at the top of the basalt. The later extent of the weathered basalt and its potential influence were not addressed in this letter. As shown in several of the monitoring wells screened in the upper basalt zone adjacent to the river (RP-11, RP-7, RP-24, RP-01 and RP-02), significant concentrations of COIs are present in this zone and likely moving toward the river.

2. Figure 5 shows the highest concentrations of 1,2-Dichlorbenzen traveling through the DGZ (including the top of the basalt zone) and discharging in the mapped groundwater discharge zones in Region 1. DEQ generally agrees with the conceptual hydrogeologic model presented by SLLI, which identifies the DGZ (including the weathered basalt) as the major pathway for COIs to the river based on the distribution of 1,2-Dichlorobenzene. However, a discussion of other RP-COIs is not presented. Other RP-COIs may be present in groundwater discharging to the river in Region 1 through the alluvium at level that pose an unacceptable risk. This assessment needs to be presented as part of the source control evaluation (SCE) or RI/FS process.

3. The fate of RP-COIs in the DGZ in Regions 2 and 3 is not addressed. As shown in Figure 5 the full lateral extent to the north of the potential RP COI groundwater plumes has not been fully delineated. Figure 5 shows that the 1,2-Dichlorobenzene plume extents below the river at concentrations above the human health JCSV of 130 mg/L. Figure 2 shows that the top of the basalt rises rapidly toward the center of the river (see boring GP-74). Currently, it is not know how close the top of the basalt zone is to the bottom of the navigational channel, or the concentration of RP-COIs in this area. As in cross section A-A', 1,2-DCB has been shown to move significant distances through the DGZ without significant attenuation (see DGZ concentration data from RP-11 to RP-01).

> As such, the potential discharge of RP-COIs in deep groundwater to the river in this area is not adequately addressed. Additional borings, groundwater sampling, transition zone water sampling, or modeling may be required to understand the fate of this plume. A significant amount of in river data has been collected by the adjunct property owners since the submittal of this letter. This data may be helpful in addressing some of these issues.

4. Because previous investigation in the Region 2 and Region 3 area did not focus on RP COIs, the extent of these parameters has not been investigated. An evaluation of all RP-COIs should be included.

5. An evaluation of upland source control measures presented in this memorandum is not a stated objected of this document and so the effectiveness or appropriateness of these measures was not addressed by DEQ in this response letter. Identified data gaps (specifically, discharge occurring within the navigational channel) cannot be left unresolved based on an anticipated and not yet defined source control measure, as stated in paragraph 1 of page 16.

6. The DAG is shown on Figure 2 and is present on the plant site, draping down the steep head of the basalt channel, out across a "ledge" in the basalt, and in two isolated spots one on Arkema and one on Siltronic at the river. Boring logs need to be presented so that DEQ can assess this interpolation. Observed cores in the site near-field appeared to be interflow zone ash-filled flow top rubble. In this regard the connectivity of the DAG from near St Helens Road through the W-8 and AL-6 area needs to be assessed. This unit is shown on Figure 2 as a continuous unit but may be two units with the colluvial gravel of their defined DAG beginning near the southern end of WDL with perhaps no connection between. Additionally, the alluvial gravel was observed at the base of the basalt layer in Siltronic borings GP-11, WS013, WS-15, and WS-16. The DAG was detected in these borings at thicknesses ranging from two to 23 feet thick.